

### **Remarks**

Claims 1-20 were pending in the above-identified application when last examined. Claims 1-20 are presented for reconsideration and allowance.

### **Claim Rejection under 35 U.S.C. § 102**

The Examiner rejected claims 1, 3-10, 12-14, 17, 18 and 20 under 35 U.S.C. 102(e) as being anticipated by Kilian (US Application 2004/0190836). Applicants respectfully traverse this rejection.

Independent claim 1 distinguishes over Kilian at least by reciting, “ a sub-mount containing conductive traces exposed at a first surface of the sub-mount; ... and a reflector positioned to reflect an optical signal from the edge-emitting laser through the first surface and through the sub-mount.” Kilian fails to disclose or suggest a structure that directs an optical signal through a surface on which traces of a sub-mount are exposed.

In regard to traces on a sub-mount, the Office Action cites paragraph [0026] of Kilian. Paragraph [0026] states, “Bond wires or other electrical connections may be provided to connect the light emitting device 30 and monitor diode 32 to metallization contacts. Hermetically sealed feed-through connections 46 may be used to couple the metallization within the recess 28 to electrical contacts on the outside of the package.” Fig. 1 of Kilian shows device 30 is mounted on a cap 22 in which connections 46 reside. Fig. 1 also clearly shows that light from device 30 reflects from cap 22 and passes

through a plate 24. Accordingly, connections 46 are at the surface of cap 22, not a surface of the plate 24 through which an optical signal passes.

In accordance with an aspect of the claimed invention, a sub-mount can be fabricated to implement both electrical and optical functions, e.g., provide electrical connections and an optical path. Kilian fails to disclose or suggest such a structure in which an optical signal passes through a surface at which traces are exposed. Accordingly, claim 1 is patentable over Kilian.

For at least these reasons, Applicants request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(e).

Claims 3-9, 18, and 20 depend from claim 1 and are patentable for at least the same reasons as claim 1. For at least this reason, Applicants request reconsideration and withdrawal of the rejection of claims 3-9, 18, and 20 under 35 U.S.C. § 102(e).

Independent claim 10 distinguishes over Kilian by reciting, "mounting a die containing a laser on a surface of a sub-mount; electrically connecting the laser to electrical traces in the sub-mount; and attaching a reflector to the sub-mount in a position such that an optical signal from the laser is reflected through the sub-mount." Kilian discloses attaching light emitting device 30 to a cap 22 containing electrical connections 46. To the extent that cap 22 is considered a sub-mount, Kilian reflects the optical signal away from the cap 22 into and through a plate 24 that provides no electrical connections. Accordingly, claim 10 is clearly patentable over Kilian.

For at least these reasons, Applicants request reconsideration and withdrawal of the rejection of claim 10 under 35 U.S.C. § 102(e).

Claims 12-14 and 17 depend from claim 10 and are patentable for at least the same reasons as claim 10. For at least this reason, Applicants request reconsideration and withdrawal of the rejection of claims 12-14, and 17 under 35 U.S.C. § 102(e).

### **Claim Rejection under 35 U.S.C. § 103**

The Examiner rejected claims 2, 11, and 19 under 35 U.S.C. 103(a) as being unpatentable over Kilian (US Application 2004/0190836) in view of Freeman et al. (US 5,195,156). Applicants respectfully traverse this rejection.

With respect to claim 2, Applicants respectfully assert that the Examiner has failed to establish a *prima facie* case of obviousness because there is no suggestion to combine the reference teachings as proposed by the Examiner. There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP §706.02(j).

The Examiner states the following on pages 3 and 4 of the Office Action regarding the instant rejection:

Kilian discloses a device comprising: a sub-mount containing conductive traces exposed [0026] at a first surface of the sub-mount; a die 30 mounted on the sub-mount and containing an edge-emitting laser 30 that is electrically coupled to the conductive traces; and a reflector 40 positioned to reflect an optical signal from the edge-emitting laser through the first surface and through the sub-mount 24. However, Kilian does not teach an alignment post attached to the sub-mount where the optical signal emerges from the sub-mount.

The Examiner, thus, admits that the primary reference, Kilian et al., fails to disclose or suggest “an alignment post attached to the sub-mount where the optical signal emerges from the sub-mount” as recited in Applicants’ claim 2, but takes the position, that this limitation would be obvious in view of the Freeman reference. Applicants respectfully assert that the Examiner’s position is improper because there is no motivation to combine the Kilian and Freeman references as proposed by the Examiner.

The Examiner has provided no basis for a teaching or suggestion in the prior art for combining elements as proposed in the Office Action. The Examiner’s argument regarding obviousness is as follows:

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide *an alignment method such as the alignment posts taught by Freeman et al.* such that the invented optical device may allow light to be coupled into the device or perhaps made available for light to be coupled out such that the signal maybe transmitted out.  
(Office Action, page 4, emphasis added)

The language italicized above represents the Examiner’s only explanation regarding a teaching or suggestion to combine. This language, however, is simply an *unsupported statement* made by the Examiner. In order to establish a *prima facie* case, a teaching or suggestion to combine must be found *in the prior art*:

It is insufficient to establish obviousness that the separate elements of the invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the elements.

*Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957, 43 USPQ2d 1294, 1297 (Fed. Cir. 1997).

The Examiner has not referred to any prior art in support of his position that a motivation or suggestion to combine exists but, instead, apparently expects his unsupported conclusory statement to suffice. Such an unsupported statement, however, cannot constitute the evidence required to establish existence of a motivation or suggestion to combine:

Whether the Board relies on an express or an implicit showing [of a motivation, suggestion or teaching to modify the teachings of a reference], it must provide particular findings related thereto.... Broad conclusory statements standing alone are not "evidence".

*In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (citing *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999))

Accordingly, the Examiner's statement does not constitute a showing of a teaching or suggestion to combine. At the very least, an Examiner must prove that some motivation or suggestion to combine can be found in knowledge generally available to one of ordinary skill in the art (see, MPEP 706.02(j) reproduced previously). In the present case, however, the Examiner provides no evidence that the requisite knowledge is generally available but, instead, attempts to rely on

personal opinion. Such personal opinion does not represent an adequate substitute for evidence.

In short, it appears that the Examiner's proposed combination of Kilian et al. and Freeman et al. is based solely on hindsight derived from Applicants' specification. The use of hindsight in this manner is clearly prohibited by the relevant case law:

Obviousness can not be established by hindsight combination to produce the claimed invention. *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). As discussed in *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985), it is the prior art itself, and not the applicant's achievement, that must establish the obviousness of the combination.

*In re Dance*, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998)

Obviousness may not be established using hindsight. See *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 220 USPQ 303, 312-13 (Fed. Cir. 1983).

*Kahn v. General Motors Corp.*, 45 USPQ2d 1608, 1613 (Fed. Cir. 1998)

In addition, Kilian fails to disclose or suggest a structure that directs an optical signal through a surface on which traces of a sub-mount are exposed.

For at least these reasons, Applicants request reconsideration and withdrawal of the rejection of claim 2 under 35 U.S.C. § 103(a).

With regard to claim 11, the Examiner states the following on pages 3 and 4 of the Office Action regarding the instant rejection:

Kilian discloses a device comprising: a sub-mount containing conductive traces exposed [0026] at a first surface of the sub-mount; a die 30 mounted on the sub-mount and containing an edge-emitting laser 30 that is electrically coupled to the conductive traces; and a reflector 40 positioned to reflect an optical signal from the edge-emitting laser through the first surface and through the sub-mount 24. However, Kilian does not teach an alignment post attached to the sub-mount where the optical signal emerges from the sub-mount.

The Examiner, thus, admits that the primary reference, Kilian et al., fails to disclose or suggest “an alignment post attached to the sub-mount where the optical signal emerges from the sub-mount” as recited in Applicants’ claim 11, but takes the position, that this limitation would be obvious in view of the Freeman reference. Applicants respectfully assert that the Examiner’s position is improper because there is no motivation to combine the Kilian and Freeman references as proposed by the Examiner.

The Examiner has provided no basis for a teaching or suggestion in the prior art for combining elements as proposed in the Office Action. The Examiner’s argument regarding obviousness is as follows:

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide *an alignment method such as the alignment posts taught by Freeman et al.* such that the invented optical device may allow light to be coupled into the device or perhaps made available for light to be coupled out such that the signal maybe transmitted out.

(Office Action, page 4, emphasis added)

The language italicized above represents the Examiner's only explanation regarding a teaching or suggestion to combine. This language, however, is simply an *unsupported statement* made by the Examiner.

In addition, Kilian fails to disclose or suggest a structure that directs an optical signal through a surface on which traces of a sub-mount are exposed.

For at least these reasons, Applicants request reconsideration and withdrawal of the rejection of claim 11 under 35 U.S.C. § 103(a).

With respect to claim 19, The Examiner states the following on pages 3 and 4 of the Office Action regarding the instant rejection:

Kilian discloses a device comprising: a sub-mount containing conductive traces exposed [0026] at a first surface of the sub-mount; a die 30 mounted on the sub-mount and containing an edge-emitting laser 30 that is electrically coupled to the conductive traces; and a reflector 40 positioned to reflect an optical signal from the edge-emitting laser through the first surface and through the sub-mount 24. However, Kilian does not teach an alignment post attached to the sub-mount where the optical signal emerges from the sub-mount.

The Examiner, thus, admits that the primary reference, Kilian et al., fails to disclose or suggest "an alignment post attached to the sub-mount where the optical signal emerges from the sub-mount" as recited in Applicants' claim 19, but takes the position, that this limitation would be obvious in view of the Freeman reference. Applicants respectfully assert that the Examiner's position is improper because there is no motivation to combine the Kilian and Freeman references as proposed by the Examiner.



The Examiner has provided no basis for a teaching or suggestion in the prior art for combining elements as proposed in the Office Action. The Examiner's argument regarding obviousness is as follows:

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide *an alignment method such as the alignment posts taught by Freeman et al.* such that the invented optical device may allow light to be coupled into the device or perhaps made available for light to be coupled out such that the signal maybe transmitted out.

(Office Action, page 4, emphasis added)

The language italicized above represents the Examiner's only explanation regarding a teaching or suggestion to combine. This language, however, is simply an *unsupported statement* made by the Examiner.

In addition, Kilian fails to disclose or suggest a structure that directs an optical signal through a surface on which traces of a sub-mount are exposed.

For at least these reasons, Applicants request reconsideration and withdrawal of the rejection of claim 19 under 35 U.S.C. § 103(a).

The Examiner rejected claims 15 and 16 under 35 U.S.C. 103(a) as being unpatentable over Kilian and Mizutani et al. (US 5822352).

Regarding claim 15, Applicants respectfully assert that the Examiner has failed to establish a *prima facie* case of obviousness because there is no suggestion to combine the reference teachings as proposed by the Examiner.

There must be some suggestion or motivation, either in the references themselves

or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP §706.02(j).

The Examiner states the following on pages 4 and 5 of the Office Action regarding the instant rejection:

In teaching the apparatus, Kilian also teaches the process limitations of electrically connecting a laser to a sub-mount and attaching a reflector such that the optical signal is reflected through the sub-mount. However, Kilian does not expressly teach electrically connecting the laser comprises connecting a plurality of lasers to a sub-mount wafer that includes the sub-mount and furthermore, cutting the sub-mount wafer to separate sub-mount from similar sub-mounts.

The Examiner, thus, admits that the primary reference, Kilian et al., fails to disclose or suggest “connecting a plurality of lasers to a sub-mount wafer that includes the sub-mount” as recited in Applicants’ claim 15, but takes the position, that this limitation would be obvious in view of the Mizutani reference. Applicants respectfully assert that the Examiner’s position is improper because there is no motivation to combine the Kilian and Mizutani references as proposed by the Examiner.

The Examiner has provided no basis for a teaching or suggestion in the prior art for combining elements as proposed in the final rejection. The Examiner’s argument regarding obviousness is as follows:

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to *apply the method used to produce semiconductors, crystal growth on the same wafer, for making of an optoelectronic device* since the material used are semiconductor material and have the same characteristics of semiconductor components.

(Office Action, page 5, emphasis added)

The language italicized above represents the Examiner's only explanation regarding a teaching or suggestion to combine. This language, however, is simply an *unsupported statement* made by the Examiner. In order to establish a *prima facie* case, a teaching or suggestion to combine must be found *in the prior art*:

It is insufficient to establish obviousness that the separate elements of the invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the elements.

*Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957, 43 USPQ2d 1294, 1297 (Fed. Cir. 1997).

The Examiner has not referred to any prior art in support of his position that a motivation or suggestion to combine exists but, instead, apparently expects his unsupported conclusory statement to suffice. Such an unsupported statement, however, cannot constitute the evidence required to establish existence of a motivation or suggestion to combine:

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*In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (citing *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999))

Accordingly, the Examiner's statement does not constitute a showing of a teaching or suggestion to combine. At the very least, an Examiner must prove that some motivation or suggestion to combine can be found in knowledge generally available to one of ordinary skill in the art (see, MPEP 706.02(j) reproduced previously). In the present case, however, the Examiner provides no evidence that the requisite knowledge is generally available but, instead, attempts to rely on personal opinion. Such personal opinion does not represent an adequate substitute for evidence.

In short, it appears that the Examiner's proposed combination of Kilian et al. and Mizutani et al. is based solely on hindsight derived from Applicants' specification. The use of hindsight in this manner is clearly prohibited by the relevant case law:

Obviousness can not be established by hindsight combination to produce the claimed invention. *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). As discussed in *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985), it is the prior art itself, and not the applicant's achievement, that must establish the obviousness of the combination.

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Obviousness may not be established using hindsight. See *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 220 USPQ 303, 312-13 (Fed. Cir. 1983).

*Kahn v. General Motors Corp.*, 45 USPQ2d 1608, 1613 (Fed. Cir. 1998)

For at least these reasons, Applicants request reconsideration and withdrawal of the rejection of claim 15 under 35 U.S.C. § 103(a).

Claim 16 depends from claim 15 and is patentable for at least the same reasons as claim 15. For at least this reason, Applicants request reconsideration and withdrawal of the rejection of claim 16 under 35 U.S.C. § 103(a).

### Conclusion

Applicants respectfully submit that Applicants' pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims is hereby requested.

Respectfully submitted,

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